

System Operator Performance Review and Assessment

1 September 2008 to 31 August 2009

Prepared by Electricity Commission

1 December 2009

Executive summary

The Electricity Commission has a legal obligation to review and assess the performance of the System Operator at least once every financial year. This is related to the Commission's role in procuring and funding system operations' services on behalf of the industry.

The review in this report covers the 12-months from 1 September 2008 to 31 August 2009. The System Operator's self-review report for the same period is a key input into this review.

As in previous years, the Commission considers that Transpower, as System Operator, has satisfactorily performed its core functions in accordance with the Rules and Regulations. The System Operator has met its PPOs and the dispatch objective.

There were significant additional achievements. The System Operator commissioned its new market systems in July 2009. Valuable progress was made in obtaining reliable black-start capability and in understanding the dynamic behaviour of the South Island system. A new SOSPA with provision for advisory services to the Commission was agreed.

However, the Commission was not satisfied with the level of engagement received from the System Operator on key industry development initiatives. At times, lack of essential technical advice from the System Operator slowed progress and adversely impacted on the Commission's ability to deliver enhanced policy arrangements in the wholesale market and system operation.

The Commission acknowledges that in the review period a lot of the System Operator's resources were committed to commissioning the new market systems. With that commissioning complete, the Commission expects that the System Operator will provide the timely advice needed for the investigation and implementation of market enhancements planned for the coming year.

Glossary of abbreviations and terms

AUFLS	Automatic Under-frequency Load Shedding
Board	Electricity Commission Board
Commission	Electricity Commission
MSP	The System Operator's Market Systems Project
PPOs	Principal Performance Obligations
Regulations	Electricity Governance Regulations 2003
Rules	Electricity Governance Rules 2003
SOI	Electricity Commission Statement of Intent 2009–2012
SOSPA	System Operator Service Provider Agreement
SSF	System Security Forecast
SWS	Special Winter Schedule
WDS	Week-ahead Dispatch Schedule

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1. Introduction and purpose of this report

1.1 Introduction

1.1.1 The Electricity Governance Regulations 2003 (Regulations) and the Electricity Governance Rules 2003 (Rules) require the Electricity Commission (Commission) Board (Board) to review the performance of the System Operator at least once every year. This is related to the Commission's role in procuring system operations services on behalf of the industry and as funder of those services.

1.2 Purpose of this report

1.2.1 The purpose of this paper is to provide a review and assessment of the performance of the System Operator in accordance with the requirements of the Rules and Regulations.

2. Background

2.1 Process

- 2.1.1 This review is the fifth under the market governance arrangements and covers the year from 1 September 2008 to 31 August 2009.
- 2.1.2 The System Operator is required to prepare a review and assessment of its own performance to the Commission every year and it submitted this document on 24 September 2009. Its self-assessment provides a commentary on many aspects of the System Operator's performance and is an important input into this review by the Commission.

2.2 Regulatory requirements

- 2.2.1 The requirements of the review process and outcome are outlined in both the Regulations and the Rules.
- 2.2.2 Regulation 47 requires the Commission to review the performance of the System Operator at least once in each financial year and the review must concentrate on the System Operator's compliance with:
 - (a) its obligations under the Regulations and Rules;
 - (b) the operation of the Regulations and Rules;
 - (c) any performance standards agreed between the System Operator and the Commission; and
 - (d) the provisions of the System Operator's service provider agreement (SOSPA) with the Commission.
- 2.2.3 Regulation 48 requires the Commission to take into account the following matters when conducting the review:
 - (a) the terms of the SOSPA;
 - (b) the reports from the System Operator to the Commission;
 - (c) the performance of the System Operator over time in relation to part C of the Rules;
 - (d) the extent to which acts or omissions of other parties have impacted on the System Operator's performance and the nature of the task being monitored;
 - (e) reports or complaints from any person;

- (f) the fact that real time co-ordination of the power system involves a number of complex judgments and inter-related incidents;
- (g) any disparity of information between the Commission and the System Operator; and
- (h) any other matter the Commission considers relevant.

2.2.4 Regulation 49 requires the Board to publicise all self-review reports it receives from the System Operator that are required under regulation 45 of the Rules within five business days of receiving them.

2.2.5 Rule 14 of section II of part C of the Rules requires the System Operator to submit, no later than 30 September in each year, to the Board a self-review and assessment of its performance in the previous 12 month period ending 31 August. Rule 14 also requires the Board to review and assess the performance of the System Operator in the 12-month period ending 31 August. The Board is required to publish its review and assessment of the System Operator within 10 business days after the Board meeting at which the review and assessment is completed.

2.2.6 One of the Commission's performance measures, outlined in the Statement of Intent 2009-2012 (SOI), is to complete an annual performance review of the System Operator's performance within three months of receipt of the System Operator's self-review report.

2.3 Review framework

2.3.1 This review and assessment of the System Operator's performance has been structured under headings that follow the guidelines contained in the Regulations and Rules:

- (a) compliance with the regulations and rules;
- (b) operation of the regulations and rules;
 - (i) reasonable and prudent system operator;
 - (ii) policy statement;
 - (iii) procurement plan; and
 - (iv) system security planning.
- (c) performance against the provisions of the SOSPA;
- (d) reports provided to the Commission (content, quality, and timeliness);
- (e) performance against any performance standards agreed between the System Operator and the Commission; and

(f) other relevant matters.

2.3.2 Other items that are included in regulation 48 that requires the Commission to take into account, but which do not appear in paragraph 2.3.1 above, and the reasons for not having them as explicit headings in the body of the report are:

- (a) “the performance of the System Operator over time in relation to part C of the Rules” is included under the heading in 3.3;
- (b) “the extent to which acts or omissions of other parties have impacted on the System Operator’s performance and the nature of the task being monitored” is implicit in relevant paragraphs, such as paragraph 3.3.6;
- (c) “reports or complaints from any person” is not relevant as no reports or complaints have been received by the Commission;
- (d) “the fact that real time co-ordination of the power system involves a number of complex judgments and inter-related incidents” is reflected in relevant paragraphs, such as paragraph 3.4.5; and
- (e) “any disparity of information between the Commission and the System Operator” is reflected in relevant paragraphs, such as paragraph 3.3.8.

2.3.3 The review process aims to cover all aspects, both positive and negative, of the System Operator’s performance and provide constructive feedback, wherever possible, for the purpose of continuous performance improvement.

2.3.4 In gathering input to the review, Commission staff preparing this report sought feedback from the different Commission groups who regularly work with the System Operator.

2.3.5 The System Operator has been given the opportunity to comment on this performance review report, and its views have been taken into consideration.

3. Assessment

3.1 Introduction

3.1.1 In conducting the review and assessment of the System Operator's performance, the Commission has reflected on the System Operator's self-review and other matters as required under the Rules and Regulations.

3.1.2 The following sections are set out in accordance with the review framework required by the Regulations and Rules.

3.2 Overall comment on performance

Performance in core functions

3.2.1 The System Operator has a key role in the regulatory arrangements. It is required to provide secure and economic operation of the power system. It receives offers to generate electricity and to provide ancillary services, is advised of the configuration and capability of the national grid, and must secure sufficient energy and ancillary services at least cost in real time to ensure consumers can turn electrical devices on and off at any time without a thought.

3.2.2 The Commission is satisfied that the System Operator performed its core functions during the review period.

Completion of the new market systems

3.2.2 The System Operator's Market Systems Project (MSP) began in late 2004 and, after further commissioning delays, *this project is now complete. While the delay in this project has been of serious concern to the industry, the System Operator is to be congratulated on now having world-leading system operating software.*

New SOSPA

3.2.3 The Commission is also pleased to have concluded negotiations with the System Operator for the new SOSPA which came into effect on 1 July 2009. The previous SOSPA, while largely appropriate for providing day-to-day system operation services under the Rules, was not well-suited to providing technical advisory services to the Commission. Negotiations on the new SOSPA began in 2007 and concluded in June 2009. In parallel, the Commission and the System Operator also agreed arrangements for the provision of technical advisory services to the Commission and for work programme co-ordination.

System Performance Verification

- 3.2.4 Over the past year the System Operator has been persistent in testing the ability of plant to start in a black-start scenario. After several tests black-start capability has been proven.
- 3.2.5 An unexpectedly wide frequency perturbation in the South Island has been investigated promptly, revealing a number of matters needing to be addressed to ensure system stability.
- 3.2.6 These actions contribute to security of electricity supply.

Input to Regulatory and Industry Development

- 3.2.7 Since the development of MSP began, the Commission's ability to make changes to the existing arrangements has been severely curtailed and this has constrained the pace and approach for several of the Commission's industry development initiatives.
- 3.2.8 Additionally, the Commission was disappointed with the delays it experienced in getting the System Operator to engage in providing analysis and advice for the Commission's market development initiatives.
- 3.2.9 The Commission is therefore pleased that specific provision for the Commission's needs have been agreed in the new SOSPA.

3.3 Compliance with Regulations and Rules

- 3.3.1 As a key service provider to the electricity market, the Regulations and Rules place many requirements on the System Operator. This section presents the Commission's assessment of the System Operator's compliance with those requirements.
- 3.3.2 In its self-review, the System Operator reported doubling of the number of self-reported breaches of the Rules in the review period.¹ While the Commission is pleased that the System Operator is self-reporting, it is concerned about the increase. It does note the System Operator expects its new market systems to reduce the manual activity that causes many of the errors which result in breaches of the Rules.
- 3.3.3 The System Operator is also required to meet, and plan to meet, obligations to maintain power system frequency quality contained in the Rules. Frequency excursions were maintained within the frequency bands specified in the Rules².

¹ Total self-reported breaches increased from 24 in 2007-08 to 50 in 2008-09.

² Rule 2.2.2 of section II of part C of the Rules requires the System Operator to act as a reasonable and prudent system operator with the objective of maintaining frequency between 47 Hz and 52 Hz.

However, there was one event, described in paragraph 3.3.4 below, which caused frequency to drop below 48 Hz and then bounce back to exceed 52 Hz.

3.3.4 At 4:30am on 1 August 2009, the HVDC between the North and South Islands tripped with a loss of 270 MW of power to the South Island. This resulted in a low frequency of 47.72 Hz in the South Island followed by a high frequency of 52.05 Hz. The event is significant because the frequency:

- (a) fell below the level expected for a contingent event (48 Hz);
- (b) fell to within 0.2 Hz of the trip setting for the first block of Automatic Under-Frequency Load Shedding (AUFLS); and
- (c) subsequently increased to a level where it is expected that some generating units will automatically disconnect.

3.3.5 The Commission notes the System Operator is conducting a thorough investigation into this event to restore confidence in the capability of reserve providers in the South Island and to ensure the modelling of reserve requirements is accurate enough to meet rule requirements³. The Commission awaits the findings of this investigation with interest.

3.3.6 The Commission also notes that there was one instance where time error exceeded the objective of not exceeding five seconds. In this case, the System Operator did not consider it was in breach of its rule requirements⁴. Although similar incidents in the past might have constituted a breach of the Rules, the Commission considers that this incident was a consequence of an under-frequency event in which the System Operator had acted reasonably given the resources it had available at the time.

3.3.7 The System Operator reported three instances where the voltage on 110 kV circuits exceeded the allowed +/-10% limits⁵. Although maintaining voltage levels within normal limits is not part of the Principal Performance Obligations (PPOs), it is an important measure⁶ that ensures:

- (a) there is sufficient flexibility for the System Operator to operate the power system; and

³ Schedule C6 requires the System Operator's reserve management process to satisfy the requirement that sufficient instantaneous reserve is scheduled to maintain the power system frequency of each of the North and South Islands at or above 48 Hz following a contingent event

⁴ Rule 2.2.5 of section II of part C of the Rules requires the System Operator to act as a reasonable and prudent system operator with the objective of ensuring frequency time error is not greater than five seconds of New Zealand standard time

⁵ Rule 3 of section III of part C of the Rules

⁶ Part of the System Operator's security policy to avoid cascade failure is the intention to avoid exceeding asset capability (including voltage limits), as set out in rule 4.1.1 of schedule C4 (policy statement) of part C of the Rules

- (b) the grid operates at voltage levels within the design limits of equipment drawing power from and injecting power into the grid.

3.3.8 Based on the information available to the Commission, it does not appear that the System Operator breached its operational obligations on any of the three voltage situations described in its self-review report.

3.4 Operation of Regulations and Rules

Reasonable and Prudent System Operator

3.4.1 It is important to the Commission that the System Operator meets its regulatory commitments, but it is equally important to consider and acknowledge the manner and form in which the System Operator fulfils those duties.

3.4.2 Fundamentally, the System Operator is required to be a “reasonable and prudent system operator” – a term which is defined in the Rules as:

“...exercising that degree of skill, diligence, prudence, foresight and economic management, as determined by good international practice and which would reasonably and ordinarily be expected from a skilled and experienced system operator engaged in the co-ordination of an integrated transmission network under the same or similar circumstances as applied in New Zealand at the time.”

Principal Performance Obligations

3.4.3 To fulfil its duty to be reasonable and prudent, the System Operator is required to meet the PPOs and the dispatch objective. The PPOs require the System Operator to⁷:

- (a) act as a “reasonable and prudent system operator” to dispatch assets made available to avoid cascade failure of assets which results in the loss of demand; and
- (b) ensure frequency remains within prescribed upper and lower limits and number and duration of frequency fluctuations (outside the normal band) stay within specified limits.

3.4.4 There were neither blackouts nor any frequency or voltage excursions large enough to cause the AUFLS relays to unnecessarily disconnect demand during the review period. The Commission is satisfied with these outcomes but notes that investigation into the significant event of 1 August 2009 is not yet complete.

⁷ Rules 2.1 and 2.2 of section II of part C of the Rules

The Commission is therefore not in a position to comment in this report on the System Operator's performance in managing that particular contingency.

- 3.4.5 The System Operator declared a total of 30 grid emergencies during the review period (up from 23 last year), all of which it managed with the resources available without major impacts on the power system.

Dispatch objective

- 3.4.6 The System Operator is also required to fulfil the dispatch objective⁸, which is to take the offers from generators and maximise, for each half hour, the gross economic benefits to all purchasers of electricity at the grid exit points, less the cost of supplying the electricity at the grid injection points and the costs of ancillary services purchased by the System Operator.

- 3.4.7 The Commission is satisfied that the System Operator has performed its duty to meet the dispatch objective during the review period. However, it is looking forward to the restoration of two processes/functions that were lost when the System Operator switched from the old to the new market system, namely the reserve adjustment factors and the new selection methodology of the frequency keeper, both of which directly affect the costs associated with dispatch.

Stepped reduction and restoration of reserve adjustment factors

- 3.4.8 The System Operator made changes to the old market systems and processes to enable it to reduce the reserve procured in steps when faced with a shortage of energy and reserve. Unfortunately, this functionality was developed too late to be included in the scope for the new market systems. Since the switch to the new market systems, the System Operator has been forced to set reserve requirements to zero in such a shortage. This reduces security below that previously available. It also means that prices are artificially depressed at a time when they should reflect the increased risk of forced load shedding⁹.

Frequency keeping selection

- 3.4.9 The other function that was introduced after the specification of the new market systems was fixed was the selection of frequency keepers. Frequency keepers are paid an offer fee but are also entitled to constrained on and off payments if they are dispatched above or below their market level, respectively, in order to be capable of performing the frequency keeping ancillary service. This element of frequency keeping costs is significant and the System Operator changed its selection process early in June 2008 to take account of the constrained on costs, which reduced the overall costs faced by purchasers.

⁸ Rule 2 of section III of part G of the Rules

⁹ restoring this capability is planned for February 2010.

- 3.4.10 The Commission understands the System Operator is working on changes to its processes to restore both of those functions described in 3.4.8 and 3.4.9, even on a temporary basis, as soon as it is practicable.
- 3.4.11 The Commission is also looking forward to the installation of a new module in the new market system which applies constraints to the dispatch of generation that more accurately reflect the limits of the transmission system.

Policy statement and procurement plan

- 3.4.12 The System Operator and Commission are required to review two crucial schedules to the Rules each year; schedule C4 (the policy statement) and C5 (the procurement plan).
- 3.4.13 Schedule C4 (the policy statement) documents the policies and practices the System Operator will follow to meet the PPOs and the dispatch objective. It includes the means by which it plans to maintain the integrity of the power system following the sudden and unexpected loss of generation or transmission assets and the situations in which it might have to shed load.
- 3.4.14 Schedule C5 (the procurement plan) sets out the requirements, the method, and the means by which the System Operator intends to procure ancillary services, (instantaneous reserve, frequency keeping, voltage support, over frequency reserve, and black start). Once the new plan is finalised each year, the System Operator negotiates and manages contracts with ancillary service agents to provide ancillary services. It then coordinates the scheduling and dispatch of electricity and ancillary services to meet its PPOs. The costs of these services are allocated to market participants according to the rules in section IV of part C.
- 3.4.15 The annual review process for both schedules is largely mature as it has been a part of the Rules since they were introduced in 2004. This means that the new drafts generally contain minor enhancements and amendments rather than revolutionary changes. It is also due in part to the fact that the timeframes required for an annual review process are not designed for addressing major development initiatives.
- 3.4.16 During the review period, the System Operator completed a review of the format and information contained in its formal notices. This resulted in minor changes to the draft policy statement submitted on 31 March 2009.¹⁰
- 3.4.17 The Rules require the System Operator to regularly review the types of anticipated events, the effects of which it mitigates by procuring instantaneous

¹⁰ Restoration of load following a loss of supply was added as an event in which grid emergency might arise (change to clause 74) and Demand Allocation Notices were removed as a formal notice in their own right (changes to clauses 75-78)

reserve¹¹. In its self review report, the System Operator states that it has largely completed its review and expects to publish a draft event management policy in October for consultation and include any changes in the draft 2010 policy statement. The Commission considers this development is important in ensuring the integrity of the power system following events that cause sudden and unexpected loss of large quantities of generation or major transmission links. It expects that consequential changes will be incorporated in the next draft of the policy statement.

System security planning

3.4.18 As part of its system security planning, the System Operator engages in several planning activities across different time frames, all of which are important in maintaining the integrity of the power system and achieving the PPOs. The Commission is satisfied with the efforts the System Operator makes in this area, especially on:

- (a) the System Security Forecast (SSF);
- (b) several national and regional planning forums;
- (c) the week-ahead dispatch schedule (WDS); and
- (d) standby reserve forecasts.

System Security Forecast

3.4.19 For its long-term planning, the System Operator produces a SSF. The Rules require the System Operator to publish a new SSF once every two years and to review the need to revise the latest SSF every six months. It consists of demand and supply forecasts and power system modelling and provides the System Operator's view of its ability to meet its PPOs over the next three years or more.

3.4.20 The System Operator published a new SSF in December 2008 and notified the Commission in June 2009 that a six-monthly revision to the SSF was not required¹².

National and regional planning forums

3.4.21 The System Operator continues to lead and participate in forums on regional and national power security issues. The Commission notes that the summer and winter groups for the upper North Island and the summer group for the upper South Island maintained a watching brief for the year as no new issues were

¹¹ Rule 13 in Schedule C4 of part C requires the System Operator to conduct such a review at least once every five years

¹² However in December 2009 The SO and EC began investigation of an emerging security issue.

identified. Although the early part of winter was remarkably cold, winter ended being relatively mild. Demand dampened by the downturn in the economic climate coupled with relatively high lake levels meant the National Winter Group did not have as many security of supply issues to consider this year.

- 3.4.22 The Commission notes the Special Winter Schedule (SWS) was affected by MSP implementation, as it was not included in the new market systems. However, the System Operator gave high priority to re-implement the SWS and started publishing it from 13 August 2009, less than a month after the new market system went live.

Week-ahead dispatch schedule

- 3.4.23 The Commission notes the introduction of the WDS during the review period. As this schedule covers six days ahead of dispatch, taking into account rolled-over generation offers and load forecast, it is considered an important new information tool for market participants. However, the System Operator has noted that the full value of this schedule will not be realised until completion of the new module in the new market system for automatic generation of constraints that accurately reflect the limits of the transmission system.

Standby reserve forecast

- 3.4.24 The Commission notes the System Operator's concerns regarding the lack of response received from generators to the forecast standby reserve shortfall notices (resulting from the standby residual check application), and its resulting desire to work with the Commission to ensure the market design provides adequate incentive for spare generation capacity to be available. The Commission has published a consultation paper¹³ in this area. It considers options which should reflect the increase in the cost of energy and reserve during periods where energy and reserve is in short supply and increase the incentive for generators to hold some generating capacity in reserve and interruptible load providers to offer more load as reserve.
- 3.4.25 The Commission notes that the System Operator has begun considering means for reaching a short-term solution in this area, possibly until a permanent solution is designed and implemented.

3.5 Service Provider Agreement

- 3.5.1 The SOSPA sets out the terms under which Transpower agrees to perform the role of System Operator. In late 2006, the System Operator notified the Commission that it wished to vary the terms of the SOSPA. Early in 2007, the two

¹³ <http://www.electricitycommission.govt.nz/consultation/scarcity-pricing/view>

parties commenced discussions which culminated in a new SOSPA that came into effect on 1 July 2009.¹⁴

- 3.5.2 The Commission welcomes the changes made in the new contract, which include:
- (a) clearer specification of the makeup of the fees;
 - (b) inclusion of an 'at risk' fee component;
 - (c) greater Commission oversight of intended and actual capital expenditure;
 - (d) greater clarity on intellectual property and information;
 - (e) expanded termination and insurance provisions; and
 - (f) requirement for the System Operator to document the internal functions it undertakes in the performance of the system operator role (functional analysis).
- 3.5.3 In addition to the requirement to meet its obligations under the Rules and Regulations, the SOSPA makes explicit a requirement for the System Operator to maintain a disaster recovery plan and to make certain warranties.
- 3.5.4 With regards to the disaster recovery plan, the System Operator has an obligation to have in place and comply with a number of arrangements and procedures relating to backups and disaster recovery. The System Operator notified the Commission in its self-review that it found no need to alter the current System Operator Disaster Recovery Plan but it updated some information in the Business Continuity Plan. The Commission notes the System Operator has postponed the business continuity simulation exercise it planned to undertake during the review period.
- 3.5.5 With regards to the warranties required of the System Operator in the SOSPA, it reiterated in its self-review that as at 31 August 2009 that it was unaware of anything within its reasonable control which might or would adversely affect its ability to provide the contracted services under the SOSPA and that it had sufficient resources, skills and supervision to carry out those services.
- 3.5.6 The financial review provided in the System Operator's self-review stated that the base agreement fees charged to the Commission totalled just under \$22 million, for the period from 1 September 2008 to 31 August 2009, plus additional fees of \$43,775 for services in addition to those provided under the base contract.
- 3.5.7 The Commission notes that the System Operator's advice to the Commission, included in the fees for additional services, amounts to less than 0.2% of its total revenue. The Commission is hopeful the release of the System Operator's

¹⁴ <http://www.electricitycommission.govt.nz/opdev/servprovinform/servprocagree>

resources previously required for other major commitments and the recent agreement on resourcing of development initiatives and work coordination will increase the amount of advice the System Operator will provide during the next review period.

3.6 Reports provided to the Commission

- 3.6.1 The Commission is satisfied with the content and timeliness of the regular monthly reports it receives from the System Operator. The Commission is also pleased to see the enhancements, introduced in February 2009, in the format of the system performance monthly report, which provides a clearer and more focused picture of system performance.
- 3.6.2 The Commission appreciates the communication about system events provided at the regular meetings with members of the Commission's Board.

3.7 Agreed performance standards

- 3.7.1 Regulation 47 also requires the Commission to review any performance standards agreed between the System Operator and the Commission. The Commission has not agreed any performance standards with the System Operator, additional to the requirements already outlined in the Rules and the Regulations, and those agreed in the SOSPA.
- 3.7.2 However, the new SOSPA provides an 'at risk' component of the fee payable to the System Operator based on performance criteria set each financial year. The amount at risk is \$250,000.

3.8 Other relevant matters

- 3.8.1 The System Operator has a variety of other roles not specifically mentioned in this report. These roles are wide ranging and include activities such as commissioning of assets jointly with asset owners, processing of dispensation/equivalence arrangements, overseeing the initial completion and maintenance of asset capability statements and test programmes, assisting in the form of submissions and contributions with rule changes, systems development and investigation projects.
- 3.8.2 This section reviews the manner and form of some of the more significant interactions.

Regulatory and industry Development Work

- 3.8.3 Within the review period, the System Operator completed work on its new market systems to a point where it switched from the old to the new systems on 21 July 2009. It has taken several years to reach this stage and the project again demanded a considerable amount of the System Operator resources over the review period.
- 3.8.4 This resource commitment, especially in specific areas of expertise only available from the System Operator, reduced its capacity to fully contribute on industry development initiatives. Furthermore, the functionality of the new market systems has been frozen since the end of 2006, thus some developments were not able to proceed and were put on hold. Other developments implemented prior to the switch to the new systems required duplication of software changes in the existing and new systems, and sometimes a third change as a temporary solution before being fully implemented in the new market systems.
- 3.8.5 Important work deferred includes:
- Work to facilitate joint operation of frequency keeping generators. This is a project offering very high benefit/cost, giving an economic case for rapid progress.
 - Progress in wind integration. Improvements to the current methods of managing wind integration are already necessary to improve system security and market efficiency.
- 3.8.6 However, despite this situation, the System Operator has provided some assistance to the Commission on the development of several rule changes and development initiatives over the review period. At times, this was at a level expected. However, at other times the System Operator made slow progress on the Commission's work priorities.

Generation commissioning

- 3.8.7 The Rules require generators to liaise closely with the System Operator when commissioning new generation plant.¹⁵ The Commission acknowledges the significant workload that planning activities place on the System Operator and is satisfied with the relatively seamless manner in which most new generation is integrated within the power system.

¹⁵ Commissioning requirements are set out in technical code A of schedule C3 of part C

Stakeholder Relations

- 3.8.8 The System Operator disseminates information via various means, mainly by posting information on its website and providing data to the Commission for its centralised datasets that are later published.
- 3.8.9 During the review period, the System Operator distributed seven newsletters through its email distribution list. The Commission notes that the System Operator held one workshop in December 2008 on the new market systems and on other topics of interest to participants. The Commission recognises the importance of workshops as they provide an important forum for the System Operator to exchange information with the industry.
- 3.8.10 The Commission appreciates the System Operator's efforts in making more of its procedures and forms available via its web pages. During the review period, the System Operator launched the new asset capability statement (ACS) database, which allows asset owners to electronically view and update their own asset capability information online. The Commission encourages the continuation of developments of this type.

3.9 Conclusions

- 3.9.1 The Commission considers that, during the review period, Transpower, as System Operator, has performed its core functions in accordance with the Rules and Regulations. The System Operator has met its PPOs and the dispatch objective.
- 3.9.2 The Commission is pleased that the System Operator has completed commissioning of its new market systems in July 2009 and with its part in the negotiations for a new SOSPA and for the provision for advisory services to the Commission.
- 3.9.3 Valuable progress was made in obtaining reliable black-start capability and in understanding the dynamic behaviour of the South Island system. The attention to understanding and testing the performance of the power system contributes significantly to system security.
- 3.9.4 However, the Commission was again frustrated during the review period in the level of engagement it received from the System Operator on key development initiatives. It notes that this situation was partly due to the inability to proceed with such initiatives until the new market systems were commissioned and because expert resources were diverted to this commissioning.
- 3.9.5 The Commission expects that, with the completion of the new market systems in July 2009 and the provision of advisory services under recently established new contractual arrangements with Transpower, the System Operator will now be able

to provide the timely advice needed for enhanced policy arrangements in the wholesale market and system operation.

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